Mr. James Stanton
Dodge Columbus Indiana
3300 East Tenth Street
Columbus, Indiana 47201

Re: Registered Construction and Operation Status
005-15340-00092

Dear Mr. Stanton:

The application from Dodge Columbus Indiana, received on February 28, 2002, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that the electrical motor gearbox manufacturing source, located at 3300 East Tenth Street, Columbus, Indiana 47201, is classified as registered. This stationary source consists of the following emission units and pollution control devices:

(a) Babbitt metal castings production, installed in 2002, consisting of the following:

(1) Babbitt preparation process, consisting of:

(A) Cast iron metal parts cleaning using one (1) 869 gallon Kolene caustic cleaning tank; one (1) sulfuric acid neutralization bath using a maximum of 1.03 pounds of sulfuric acid per hour; one (1) hydrochloric acid etching bath using a maximum of 0.30 pounds of hydrochloric acid per hour; and one flux bath using a maximum of 1.22 pounds of flux per hour; and

(B) Tinning of cast iron parts, using one (1) tin coating bath at a maximum of 0.93 pounds of tin solder per hour, equipped with a natural gas fired Kolene heater rated at 2.0 million British thermal units heat input per hour (MMBtu/hr),

all exhausting at one (1) stack.

(2) Babbitt application process, consisting of:

(A) Babbitt melting using three (3) melt pots at a total maximum of 11.08 pounds of babbitt ingots per hour, with one (1) natural gas fired holding oven, identified as Oven #4, at a maximum heat input rate of 0.51 MMBtu per hour, exhausting at one (1) stack;

(B) Babbitt casting coating process, pouring up to 11.08 pounds of melted babbitt per hour, and coating tin-coated cast iron metal parts to produce 375 pounds of babbitt-coated castings per hour; and

(C) Babbitt coated castings machining operations, machining up to 375 pounds per hour of babbitt-coated castings, including three (3) machining centers using machining coolant; two (2) boring machines and two (3) sanders, exhausting into the building.

(3) Babbitt work-up/rework process for babbitt castings repair and re-machining, with a capacity to process up to 375 pounds per hour of babbitt-coated castings, using one (1) oxyacetylene torch and three (3) sanders, exhausting at one (1) stack.

(b) Cast iron parts processing and assembly operations, consisting of:

(1) Machining of up to 375 pounds per hour of metal parts, installed both prior to 1970 and 2002, using lathes, machining centers, drills, grinders, a ban saw, chuckers, and milling machines, applying approximately 0.8 gallons per hour of machining coolant to several machines and up to 6 gallons of tapping compound per year, all exhausting into the building.

(2) Metal parts cleaning and waste coolant solution recycling, consisting of:

(A) Pre-assembly metal parts cleaning, consisting of one (1) detergent-based parts washer using 0.92 gallons of cleaner per hour; and one (1) rust preventive bath, using 0.62 gallons of metal rust-preventive per hour, exhausting through one (1) stack.

(B) Repair Department cleaning, consisting of one (1) 225 gallon Safety-Kleen solvent parts washer, installed in 2002, using 0.12 gallons per hour of cleaning solvent, exhausting into the building.

(C) Waste coolant/cutting solution recycling, consisting of three (3) natural gas fired evaporators, identified as Evaporators 1, 2 and 3, each with a burner heat input rating of 0.195 MMBtu per hour, processing up to a total of 140 pounds of waste solution per hour, each exhausting at one (1) stack.

(3) Spray painting of metal castings, consisting of:

(A) One (1) paint spray booth, identified as Paint Booth 1, installed prior to 1970, using 0.20 gallons of coating per hour, equipped with a low pressure high volume spray application system and dry filter for particulate matter overspray control, exhausting to one (1) stack.

(B) One (1) paint spray booth, identified as Paint Booth 2, installed in 2002, using 0.06 gallons of coating per hour, equipped with a low pressure high volume spray application system and dry filter for particulate matter overspray control, exhausting to one (1) stack.

(C) One (1) paint spray booth, identified as Paint Booth 3, installed in 2002, using 0.05 gallons of coating per hour, equipped with a low pressure high volume spray application system and dry filter for particulate matter overspray control, exhausting to one (1) stack.

(D) One (1) paint spray booth, identified as Paint Booth 4, installed in 2002, using 0.10 gallons of coating per hour, equipped with a low pressure high volume spray application system and dry filter for particulate matter overspray control, exhausting to one (1) stack.

(4) One (1) 7.25 gallon plastic seal dip tank, installed in 2002, using 0.11 pounds per hour of liquid plastic sealant, exhausting to one (1) stack.

(5) Cast iron parts curing operation, consisting of

(A) Heat treating of metal parts during production using two (2) natural gas fired endothermic heat treat ovens, identified as T500 and T900, and one (1) natural gas fired Ipsen generator, installed prior to 1970, with a total heat input rating of 1.032 MMBtu per hour, and with T500 exhausting to four (4) stacks identified as HO-1, HO-2, HO-3 and HO-4, T900 exhausting to one (1) stack identified as HO-5, and Ipsen exhausting to one (1) stack identified as IG-1; and

(B) One (1) electric Grieve epoxy curing oven, installed in 2002, operating at a maximum of 650 pounds of metal parts per 30-minute batch cycle, exhausting into the building.

(6) Miscellaneous activities and equipment, including:

(A) Finished metal parts packaging, consisting of three (3) Instapak foam packaging spray stations using a total maximum of 0.05 gallons of foam component material per hour, exhausting into the building;

(B) Two (2) shielded metal arc (SMA) welding stations using a total of 37.56 pounds of welding rods per hour, exhausting to one (1) stack;

(C) Twelve (12) propane fuel fired lift trucks; and

(D) Miscellaneous natural gas fired space heaters (approximately 14), each with a heat input rating of 0.175 MMBtu per hour, and three (3) hot water heaters, each with a heat input rating of 0.199 MMBtu per hour.

The following conditions shall be applicable:

1. Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuos opacity monitor in a six (6) hour period.

2. Pursuant to 326 IAC 6-3-2(c), particulate matter emissions shall be limited as follows:

(a) The particulate matter as overspray from the coatings applied at Paint Booth Nos. 1, 2, 3 and 4 each shall not exceed the pound per hour emission rate established as E in the following formula:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

The dry filters shall be in operation at all times the surface coating facilities are in operation in order to comply with this limit.

(b) Pursuant to 326 IAC 6-3-2 (Process Operations), particulate matter (PM) emitted from the facilities listed below shall be limited as stated, based on the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

Emission Unit/Activity	Process Weight Rate (lbs/hr)	Allowable PM Emissions (326 IAC 6-3-2) (lb/hr)
Cast iron parts machining	375	1.34
Babbitt coated castings machining	375	1.34
Babbitt work-up/rework repair and re-machining	375	1.34

(c) Pursuant to 326 IAC 6-3-2(c), the allowable particulate matter emission rate from the following processes with maximum process weight rates less than 100 pounds per hour shall not exceed 0.551 pounds per hour:

(1) tinning of cast iron parts, using one (1) tin coating bath at a maximum of 0.93 pounds of tin solder per hour;

(2) babbitt melting using three (3) melt pots at a total maximum of 11.08 pounds of babbitt ingots per hour;

(3) babbitt casting coating process, pouring up to 11.08 pounds of melted babbitt per hour; and

(4) two (2) shielded metal arc (SMA) welding stations using a total of 37.56 pounds of welding rods per hour.

3. Pursuant to 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), the volatile organic compound (VOC) content of coatings delivered to the applicators at Paint Booths 2, 3 and 4 shall be limited to 3.5 pounds of VOCs per gallon of coating less water, for air dried coatings.

Solvent sprayed from application equipment during cleanup or color changes shall be directed into containers. Such containers shall be closed as soon as such solvent spraying is complete, and the waste solvent shall be disposed of in such a manner that evaporation is minimized.

4. Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), for cold cleaning operations constructed after January 1, 1980, the owner or operator shall ensure that the following requirements are met for the one (1) 225 gallon Safety-Kleen type cold cleaning parts washer at the Repair Department:

(a) Equip the cleaner with a cover;

(b) Equip the cleaner with a facility for draining cleaned parts;

(c) Close the degreaser cover whenever parts are not being handled in the cleaner;

(d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;

(e) Provide a permanent, conspicuous label summarizing the operation requirements;

(f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

5. Any change or modification which may increase the potential to emit a combination of HAPs, VOC, NOx, SO2, PM or PM10 to twenty five (25) tons per year, or a single HAP to ten (10) tons per year, from this source shall require approval from IDEM, OAQ prior to making the change.

This registration is the second air approval issued to this source. All previous approvals are superceded as they have been included in this registration. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.5-4(a)(3). The annual notice shall be submitted to:

Compliance Data Section
Office of Air Quality
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Management

MH / EVP

c: File - Bartholomew County
Bartholomew County Health Department
Air Compliance - D. J. Knotts
Permit Tracking
Compliance Data Section - Karen Nowak
Administrative and Development
Technical Support and Modeling - Michele Boner

Registration

This form should be used to comply with the notification requirements under 326 IAC 2-5.5-4(a)(3).

Company Name:	**Dodge Columbus Indiana**
Address:	**3300 East Tenth Street**
City:	**Columbus, Indiana 47201**
Authorized Individual:	**James Stanton, Plant Manager**
Phone #:	**(812) 376 - 1381**
Registration #:	**005-15340-00092**

I hereby certify that Dodge Columbus Indiana is still in operation and is in compliance with the requirements of Registration No. 005-15340-00092.

Name (typed):
Title:
Signature:
Date:

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Registration

Source Background and Description

Source Name:	Dodge Columbus Indiana
Source Location:	3300 East Tenth Street, Columbus, Indiana 47201
County:	Bartholomew
SIC Code:	3562, 3566, 3568
Operation Permit No.:	005-15340-00092
Permit Reviewer:	Michael Hirtler / EVP

The Office of Air Quality (OAQ) has reviewed an application from Dodge Columbus Indiana relating to the construction and operation of an electrical motor gearbox manufacturing source.

History

On February 6, 1987, OAQ issued Dodge Columbus Indiana (under the former source name of Reliance Electric Reeves Plant) Registered Construction and Operation Status 03-02-87-0108. This was the first-time and only approval for the source. On February 28, 2002, the source submitted an application to the OAQ requesting installation and operation approval for new production facilities. These new facilities will be relocated to this site from another manufacturing plant owned by Dodge Columbus Indiana that is located at nearby Seventh Avenue in Columbus, Indiana. Since this approval request shall not change the permit level of the source (i.e., 326 IAC 2-5.5 (Registrations)), the approval shall be made for the entire source pursuant to 326 IAC 2-5.5-2(b), and no distinction is made between existing and modified source emissions. Upon its issuance, this approval will replace existing Registered Construction and Operation Status 03-02-87-0108.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices:

(a) One (1) paint spray booth, identified as Paint Booth 1, installed prior to 1970, using 0.20 gallons of coating per hour to paint metal castings, equipped with a low pressure high volume spray application system and dry filter for particulate matter overspray control, exhausting to one (1) stack.

(b) Machining of up to 375 pounds per hour of metal parts using lathes, machining centers, drills, grinders, a ban saw, chuckers, and milling machines, using approximately 0.8 gallons per hour of machining coolant (i.e., cutting fluid) and 6 gallons of tapping compound per year, all exhausting into the building.

(c) Waste coolant/cutting solution recycling using one (1) natural gas fired evaporator, identified as Evaporator 1, installed prior to 1970, with a burner heat input rating of 0.195 MMBtu per hour, processing up to 113 pounds of waste solution per hour, exhausting at one (1) stack.

(d) Heat treating of metal parts during production using two (2) natural gas fired endothermic heat treat ovens, identified as T500 and T900, and one (1) natural gas fired Ipsen generator, with a total heat input rating of 1.032 MMBtu per hour, installed prior to 1970, with T500 exhausting at four (4) stacks identified as HO-1, HO-2, HO-3 and HO-4, T900 exhausting at one (1) stack identified as HO-5, and Ipsen exhausting at one (1) stack identified as IG-1.

(e) Miscellaneous activities and equipment, including:

(1) Twelve (12) propane fuel fired lift trucks; and

(2) Miscellaneous natural gas fired space heaters (approximately 14), each with a heat input rating of 0.175 MMBtu per hour, and three (3) hot water heaters, each with a heat input rating of 0.199 MMBtu per hour.

New Emission Units and Pollution Control Equipment

The source consists of the following new emission units and pollution control devices during this review process, all of which exists at a separate source (see **Source Definition** section below), but is relocated to this source as new equipment under this approval:

(a) Babbitt metal castings production, installed in 2002, consisting of the following:

(1) Babbitt preparation process, consisting of:

(A) Cast iron metal parts cleaning using one (1) 869 gallon Kolene caustic cleaning tank; one (1) sulfuric acid neutralization bath using a maximum of 1.03 pounds of sulfuric acid per hour; one (1) hydrochloric acid etching bath using a maximum of 0.30 pounds of hydrochloric acid per hour; and one flux bath using a maximum of 1.22 pounds of flux per hour; and

(B) Tinning of cast iron parts, using one (1) tin coating bath at maximum of 0.93 pounds of tin solder per hour, equipped with a natural gas fired Kolene heater rated at 2.0 million British thermal units heat input per hour (MMBtu/hr),

all exhausting at one (1) stack.

(2) Babbitt application process, consisting of:

(A) Babbitt melting using three (3) melt pots at a total maximum of 11.08 pounds of babbitt ingots per hour using a total maximum of 11.08 pounds of babbitt ingots per hour, with one (1) natural gas fired holding oven, identified as Oven #4, at a maximum heat input rate of 0.51 MMBtu per hour, exhausting at one (1) stack;

(B) Babbitt casting coating process, pouring up to 11.08 pounds of melted babbitt per hour, and coating tin-coated cast iron metal parts to produce 375 pounds of babbitt-coated castings per hour; and

(C) Babbitt coated castings machining operations, machining up to 375 pounds per hour of babbitt-coated castings, including three (3) machining centers using machining coolant; two (2) boring machines and two (3) sanders, exhausting into the building.

(3) Babbitt work-up/rework process for babbitt castings repair and re-machining, with a capacity to process up to 375 pounds per hour of babbitt-coated castings, using one (1) oxyacetylene torch and three (3) sanders, exhausting at one (1) stack.

(b) Cast iron parts processing and assembly operations, installed in 2002, consisting of:

(1) Machining of up to 375 pounds per hour of metal parts, using lathes, machining centers, drills, grinders, a ban saw, chuckers, and milling machines, applying approximately 0.8 gallons per hour of machining coolant to several machines and up to 6 gallons of tapping compound per year, all exhausting into the building.

(2) Metal parts cleaning and waste coolant solution recycling, consisting of:

(A) Pre-assembly metal parts cleaning, consisting of one (1) detergent-based parts washer using 0.92 gallons of cleaner per hour; and one (1) rust preventive bath, using 0.62 gallons of metal rust-preventive per hour, exhausting through one (1) stack.

(B) Repair Department cleaning, consisting of one (1) 225 gallon Safety-Kleen solvent parts washer, using 0.12 gallons per hour of cleaning solvent, exhausting into the building.

(C) Waste coolant/cutting solution recycling, consisting of two (2) natural gas fired evaporators, identified as Evaporators 2 and 3, each with a burner heat input rating of 0.195 MMBtu per hour, processing up to a total of 140 pounds of waste solution per hour, each exhausting at one (1) stack.

(3) Spray painting of metal castings, installed in 2002, and consisting of:

(A) One (1) paint spray booth, identified as Paint Booth 2, using 0.06 gallons of coating per hour, equipped with a low pressure high volume spray application system and dry filter for particulate matter overspray control, exhausting to one (1) stack.

(B) One (1) paint spray booth, identified as Paint Booth 3, using 0.05 gallons of coating per hour, equipped with a low pressure high volume spray application system and dry filter for particulate matter overspray control, exhausting to one (1) stack.

(C) One (1) paint spray booth, identified as Paint Booth 4, using 0.10 gallons of coating per hour, equipped with a low pressure high volume spray application system and dry filter for particulate matter overspray control, exhausting to one (1) stack.

(4) One (1) 7.25 gallon plastic seal dip tank, installed in 2002, using 0.11 pounds per hour of liquid plastic sealant, exhausting to one (1) stack.

(5) Cast iron parts curing operation, installed in 2002, consisting of one (1) electric Grieve epoxy curing oven, operating at a maximum of 650 pounds of metal parts per 30-minute batch cycle, exhausting into the building.

(6) Miscellaneous activities and equipment, including:

(A) Finished metal parts packaging, consisting of three (3) Instapak foam packaging spray stations using a total maximum of 0.05 gallons of foam component material per hour, exhausting into the building; and

(B) Two (2) shielded metal arc (SMA) welding stations using a total of 37.56 pounds of welding rods per hour, exhausting to one (1) stack.

Existing Approvals

The source has been operating under previous approvals, including the following:

Registered Construction and Operation Status 03-02-87-0108, issued on February 6, 1987.

All conditions from previous approvals were incorporated into this permit.

Source Definition

The source owns two (2) plants that are located approximately 1.5 miles apart. This approval review includes a source request to relocate some existing equipment from Plant 2 to Plant 1, with the plants located at the following addresses:

(a) Plant 1 is located at 3300 East Tenth Street, Columbus, Indiana, 47201; and

(b) Plant 2 is located at 1225 Seventh Street, Columbus, Indiana, 47201.

These two (2) plants have the same SIC codes and are owned by one (1) company. However, the properties are not considered to be “adjacent” since there is no nexus between the activities at the two plant locations (i.e., no contribution of parts used in final production nor resource sharing). Based on this, Plants 1 and 2 are considered as two (2) separate sources, and the equipment to be installed at Plant 1 will be considered as new equipment having a May, 2002 installation date.

Enforcement Issue

(a) During this review process, IDEM has determined that this source has not obtained the appropriate registration renewal approval, pursuant to the requirements of 326 IAC 2-5.5-2(b). The subject equipment includes all equipment listed in this Technical Support Document under the conditions entitled **Permitted Emission Units and Pollution Control Equipment** and **New Emission Units and Pollution Control Equipment**.

(b) IDEM is reviewing this matter and will take appropriate action. This proposed registration is intended to satisfy the requirements of the construction permit rules and 326 IAC 2-5.5-2(b).

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (^{0}F)
EV-1	Evaporator 1	27.4	1.2	unknown	unknown
P-1	Paint Booth 1	27	3	unknown	ambient
HO-1	Heat Treat Oven T500	25.7	2.5	unknown	unknown
HO-2	Heat Treat Oven T500	26.7	0.7	unknown	unknown
HO-3	Heat Treat Oven T500	27.3	0.8	unknown	unknown
HO-4	Heat Treat Oven T500	22.2	1.25 x 1.25	unknown	unknown
HO-5	Heat Treat Oven T900	29.9	2	unknown	unknown
IG-1	Ipsen Generator	22.25	0.8	unknown	unknown
*	*	*	*	*	*

*Stack data for remaining facilities, including Paint Booths 2,3 & 4, Evaporators 2 & 3, plastic seal tank, welding, and babbitt processing, is not yet available.

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on February 28, 2002, with additional information received on April 15, 2002.

Emission Calculations

The calculations submitted by the applicant have been verified and found to be accurate and correct. These calculations are provided as pages 6 through 16 of 16, in Appendix A of this document. Additional detailed emissions calculations are provided as pages 1 through 5 of 16, in Appendix A of this document.

The following is noted with respect to the potential to emit of lead from the three (3) babbitt melt pots that use a total maximum of 11.08 pounds of babbitt ingots per hour. The source has indicated in the application that during 1995, a test of lead emissions was performed at the babbitt melt pots, and the test results indicated that there was no lead detected from the babbitt melting process. A review of U.S. EPA's AP-42 emission factor document, Section 12.17 *Miscellaneous Lead Products*, indicates that lead used in the manufacture of bearings (i.e., the babbitting process described herein), produces negligible lead emissions from melting and casting, even without controls. Since this statement from AP-42 is consistent with the stated results of the 1995 test, no requirement for further testing has been included in this approval.

Potential To Emit of Source Before Controls

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	Potential To Emit (tons/year)
PM	8.36
PM-10	8.32
SO_2	0.02
VOC	18.98
CO	1.94
NO_x	3.27

HAP's	Potential To Emit (tons/year)
hydrochloric acid (HCl)	1.31
lead (Pb)	0.06
toluene	5.10
xylene	1.26
glycol ethers	1.01
total other misc. HAPs	1.01
TOTAL	9.76

(a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) toluene, as a single hazardous air pollutant (HAP), is not equal to or greater than ten (10) tons per year, and the potential to emit the combination of HAPs is not equal to or greater than ten (25) tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

(b) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of PM, PM_{10} and VOC are less than twenty-five (25) tons per year, and PM and PM-10 are greater than five (5) tons per year and VOC is greater than ten (10) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-5.5.

(c) Fugitive Emissions
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD applicability.

Actual Emissions

No previous emission data has been received from the source.

County Attainment Status

The source is located in Bartholomew County.

Pollutant	Status
PM-10	attainment
SO_2	attainment
NO_2	attainment
Ozone	attainment
CO	attainment
Lead	attainment

(a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Bartholomew County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(b) Bartholomew County has been classified as attainment or unclassifiable for all remaining criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)
This existing source, with total emissions indicated in this Registration No. 005-15340-00092, is still not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

(a) each criteria pollutant is less than 100 tons per year,

(b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and

(c) any combination of HAPs is less than 25 tons/year.

This status is based on all the air approvals issued to the source. This status has been verified by the OAQ inspector assigned to the source.

Federal Rule Applicability

(a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.

(b) (1) 40 CFR Part 63, Subpart X (National Emission Standards for Hazardous Air Pollutants from Secondary Lead Smelting)

This source is not subject to the NESHAP for source categories, 326 IAC 20-14, (40 CFR 63, Subpart X), *National Emission Standards for Hazardous Air Pollutants from Secondary Lead Smelting*, for its babbitt melting process since the source does not perform smelting, nor is the source a secondary lead smelter, pursuant to 40 CFR 63.542. Therefore this rule does not apply to the source.

(2) 40 CFR Part 63, Subpart T (National Emission Standards for Halogenated Solvent Cleaning)

The parts cleaning operation at the Repair Department that includes one (1) 225 gallon Safety-Kleen solvent parts washer, is not subject to the National Emission Standards for Hazardous Air Pollutants, 326 IAC 20, (40 CFR 63, Subpart T). Subpart T applies to degreasing operations using one of six listed halogenated solvents, or any combination of the solvents in a concentration greater than 5 percent by weight, as a cleaning or drying agent. The source does not use the regulated halogenated solvents in the degreasing operation; therefore, Subpart T does not apply.

There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14 and 40 CFR Part 61, and 326 IAC 20 and 40 CFR Part 63) applicable to this source.

State Rule Applicability - Entire Source

326 IAC 2-2 and 40 CFR 52.21 (Prevention of Significant Deterioration, PSD)

Pursuant to 326 IAC 2-2 and 40 CFR 52.21 (PSD), this source, constructed in part after 1980, is not considered a major source. This source is not one of the 28 listed source categories and it does not have the potential to emit of 250 tons per year or more of any criteria pollutant. Therefore, the requirements of 326 IAC 2-2 and 40 CFR 52.21 (Prevention of Significant Deterioration, PSD) are not applicable.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants)

This source is not subject to 326 IAC 2-4.1-1 (New Source Toxics Control). The source does not have potential emissions, before controls, of 10 tons per year of any HAP or 25 tons per year of any combination of HAPs.

326 IAC 2-6 (Emission Reporting)

This source is located in Bartholomew County which is not one of the specifically listed counties, nor does the source have the potential to emit CO, VOC, NO_X, PM10 (including fugitive emissions), or SO_2 in amounts at or exceeding one-hundred (100) tons per year. Therefore, the requirements of 326 IAC 2-6 do not apply to the source.

326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 6-3-2 (Process Operations)

Pursuant to 326 IAC 6-3-2(c), particulate matter emissions shall be limited as follows:

(a) The particulate matter as overspray from the coatings applied at Paint Booth Nos. 1, 2, 3 and 4 each shall not exceed the pound per hour emission rate established as E in the following formula:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

The dry filters shall be in operation at all times the surface coating facilities are in operation in order to comply with this limit.

(Note: The finished metal parts packaging process, consisting of three (3) Instapak foam packaging spray stations, is determined to generate no particulate overspray emissions. The process involves spraying polymerizing foam (containing MDI) into an enclosed package that contains the finished metal product to prevent product damage during shipping.)

(b) Pursuant to 326 IAC 6-3-2 (Process Operations), particulate matter (PM) emitted from the facilities listed below shall be limited as stated, based on the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10 P^{0.67}$ where E = rate of emission in pounds per hour and P = process weight rate in tons per hour

Emission Unit/Activity	Process Weight Rate (lbs/hr)	Uncontrolled PM Emissions (lb/hr)	Control Efficiency * %	Controlled PM Emissions (lb/hr)	Allowable PM Emissions (326 IAC 6-3-2) (lb/hr)
Cast iron parts machining	375	0.076	0%	0.076	1.34
Babbitt coated castings machining	375	0.009	0%	0.009	1.34
Babbitt work-up/rework repair and re-machining	375	0.006	0%	0.006	1.34

* Some of the machining operations use aqueous cutting coolants, but no control efficiency is assumed.

There will be no compliance monitoring condition specified in the approval for these facilities/activities since they do not have a control device and do not have actual emissions exceeding 25 tons per year, nor do they have allowable emissions for the controlled pollutant (i.e., PM) exceeding 10 pounds per hour.

(c) Pursuant to 326 IAC 6-3-2(c), the allowable particulate matter emission rate from the following processes with maximum process weight rates less than 100 pounds per hour shall not exceed 0.551 pounds per hour:

(1) tinning of cast iron parts, using one (1) tin coating bath at a maximum of 0.93 pounds of tin solder per hour

(2) babbitt melting using three (3) melt pots at a total maximum of 11.08 pounds of babbitt ingots per hour;

(3) babbitt casting coating process, pouring up to 11.08 pounds of melted babbitt per hour; and

(4) two (2) shielded metal arc (SMA) welding stations using a total of 37.56 pounds of welding rods per hour.

There will be no compliance monitoring condition specified in the approval for these facilities/activities since they do not have a control device and do not have actual emissions exceeding 25 tons per year, nor do they have allowable emissions for the controlled pollutant (i.e., PM) exceeding 10 pounds per hour.

326 IAC 8-2-9 (Miscellaneous Metal Coating)

Pursuant to 326 IAC 8-2-1 (Applicability) and 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), facilities existing in specifically listed counties as of July 1, 1990, or that are newly constructed in any county after July 1, 1990, and with actual VOC emissions of greater than fifteen (15) pounds per day before add-on controls, shall limit the VOC content of the applied coating to 3.5 pounds of VOCs per gallon of coating less water, for air dried coatings.

This source coats metal products in four (4) spray paint booths, and is located in Bartholomew County, which is a non-specifically listed county. Paint Booth 1 was constructed prior to 1970 and, therefore, the requirements of this rule do not apply. Nonetheless, the source does use compliant coatings in this facility. Paint Booths 2, 3 and 4, constructed in May, 2002, each have a potential to emit less than 15 pounds per day. While the requirements of the rule do no apply based on this applicable emission rate, the source uses compliant coatings in these three (3) new facilities. Rather than maintain daily records of VOC input usage to demonstrate continued non-applicability to the requirements, the source has requested that the rule requirements be extended to each of the three (3) coating facilities. Therefore, the source shall comply with the requirements of the rule as follows:

Pursuant to 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), the volatile organic compound (VOC) content of coatings delivered to the applicators at Paint Booths 2, 3 and 4 shall be limited to 3.5 pounds of VOCs per gallon of coating less water, for air dried coatings.

Solvent sprayed from application equipment during cleanup or color changes shall be directed into containers. Such containers shall be closed as soon as such solvent spraying is complete, and the waste solvent shall be disposed of in such a manner that evaporation is minimized.

Based on the MSDS submitted by the source and calculations made, the coating booths are in compliance with this requirement.

326 IAC 8-3-2 (Cold Cleaner Operations)

The source, which is located in Bartholomew County and maintains one (1) 225 gallon Safety-Kleen type cold cleaning parts washer at the Repair Department, is subject to the applicable rule requirements since the cleaner, installed in 2002, is new after January 1, 1980. As such, and pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), for cold cleaning operations constructed after January 1, 1980, the owner or operator shall ensure that the following requirements are met for the one (1) 225 gallon Safety-Kleen type cold cleaning parts washer at the Repair Department:

(a) Equip the cleaner with a cover;

(b) Equip the cleaner with a facility for draining cleaned parts;

(c) Close the degreaser cover whenever parts are not being handled in the cleaner;

(d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;

(e) Provide a permanent, conspicuous label summarizing the operation requirements;

(f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

The source shall comply with these requirements.

326 IAC 8-3-5 (Cold Cleaner Degreaser Operation and Control)

The requirements of this rule apply to cold cleaning degreasers without remote solvent reservoirs that either existed as of July 1, 1990 and were located in a specified county, or the cleaning facility was constructed after July 1, 1990 and was located anywhere in the state. This source, located in Bartholomew County, which is a non-listed county, is not subject to the applicable rule requirements since the degreaser has a remote solvent reservoir.

Conclusion

The construction of the new facilities and operation of this electrical motor gearbox manufacturing source shall be subject to the conditions of the attached proposed Registration No. 005-15340-00092.

Appendix A: Emissions Summary

Company Name: Dodge Columbus Indiana
Address City IN Zip: 3300 East Tenth Street, Columbus, Indiana 47201
MSOP No.: 005-15340-00092
Reviewer: Michael Hirtler / EVP
Date: 03/15/02

Uncontrolled Potential Emissions (tons/year)

	Pollutant						
Emissions Generating Activity	PM	PM10	SO2	NOx	VOC	CO	HAPs
Babbitt Preparation, Application & Re-Work *	0.08	0.10	0.01	1.18	0.05	0.77	1.37
Cast Iron Parts Machining	0.33	0.14	0.00	0.00	3.22	0.00	0.33
Cast Iron Parts Cleaning	0.00	0.00	0.00	0.00	4.32	0.00	0.00
Cast Iron Parts Spray Painting (4 Paint Booths)	4.89	4.89	0.00	0.00	8.59	0.00	7.38
Coated cast Iron Parts Heat Treating & Curing *	0.01	0.03	0.00	0.45	0.90	0.38	negl.
Coolant Recycling (3 Evaporators) *	0.00	0.03	0.00	0.34	1.03	0.25	negl.
Seal Dip Tank	0.00	0.00	0.00	0.00	0.27	0.00	0.00
Instapak Foam Spray Packaging Stations (3 Stations)	0.00	0.00	0.00	0.00	0.53	0.00	0.51
Welding (2 SMA stations)	3.03	3.03	0.00	0.00	0.00	0.00	0.17
Miscellaneous Natural Gas & Propane Combustion	0.02	0.10	0.01	1.30	0.07	0.54	negl.
Total Uncontrolled Potential to Emit (tons/year):	8.36	8.32	0.02	3.27	18.98	1.94	9.76

Controlled/Limited Potential Emissions (tons/year)

Emissions Generating Activity	PM	PM10	SO2	NOx	VOC	CO	HAPs
Babbitt Preparation, Application & Re-Work *	0.08	0.10	0.01	1.18	0.05	0.77	1.37
Cast Iron Parts Machining	0.33	0.14	0.00	0.00	3.22	0.00	0.33
Cast Iron Parts Cleaning	0.00	0.00	0.00	0.00	4.32	0.00	0.00
Cast Iron Parts Spray Painting (4 Paint Booths)	0.25	0.25	0.00	0.00	8.61	0.00	7.38
Coated cast Iron Parts Heat Treating & Curing *	0.01	0.03	0.00	0.45	0.90	0.38	negl.
Coolant Recycling (3 Evaporators) *	0.00	0.03	0.00	0.34	1.03	0.25	negl.
Seal Dip Tank	0.00	0.00	0.00	0.00	0.27	0.00	0.00
Instapak Foam Spray Packaging Stations (3 Stations)	0.00	0.00	0.00	0.00	0.53	0.00	0.51
Welding (2 SMA stations)	3.03	3.03	0.00	0.00	0.00	0.00	0.17
Miscellaneous Natural Gas & Propane Combustion	0.02	0.10	0.01	1.30	0.07	0.54	negl.
Total Controlled/Limited Potential to Emit (tons/year):	3.72	3.68	0.02	3.27	19.00	1.94	9.76

Notes:
* Includes natural gas combustion emissions, as computed on page 2 of 16 of TSD Appendix A.

Total potential to emit based on rated capacity at 8,760 hours/year.

Appendix A: Emission Calculations
Natural Gas & Propane Combustion
MM BTU/HR <100

Company Name: **Dodge Columbus Indiana**
Address City IN Zip: **3300 East Tenth Street, Columbus, Indiana 47201**
MSOP No.: **005-15340-00092**
Reviewer: **Michael Hirtler / EVP**
Date: **03/15/02**

Combustion Unit Type	Heat Capacity (MMBtu/hr)	No. of Units	Pot. Gas Thruput (MMCF/yr}	Emission Factor in lb/MMCF						Potential Emission Rate in tons/year					
				PM*	PM10*	SO2	NOx**	VOC	CO***	PM	PM10	SO2	NOx	VOC	CO
Natural Gas Firing															
Curing (Heat Treat Ovens T500 &															
T900, & Ipsen Generator - Total)	1.032	1	9.04	1.9	7.6	0.6	100.0	5.5	84.0	0.01	0.03	0.00	0.45	0.02	0.38
Evaporator 1 Burner	0.195	1	1.71	1.9	7.6	0.6	94.0	5.5	40.0	0.00	0.01	0.00	0.08	0.00	0.03
Evaporator 2 Burner	0.300	1	2.63	1.9	7.6	0.6	100.0	5.5	84.0	0.00	0.01	0.00	0.13	0.01	0.11
Evaporator 3 Burner	0.300	1	2.63	1.9	7.6	0.6	100.0	5.5	84.0	0.00	0.01	0.00	0.13	0.01	0.11
Kolene Heater (Babbitt Prep)	2.000	1	17.52	1.9	7.6	0.6	100.0	5.5	84.0	0.02	0.07	0.01	0.88	0.05	0.74
Oven #4 (Babbitt Melt Pots)	0.150	1	1.31	1.9	7.6	0.6	94.0	5.5	40.0	0.00	0.00	0.00	0.06	0.00	0.03
Space Heaters (Plant-wide)	0.175	14	21.46	1.9	7.6	0.6	94.0	5.5	40.0	0.02	0.08	0.01	1.01	0.06	0.43
Hot Water Heaters	0.199	3	5.23	1.9	7.6	0.6	94.0	5.5	40.0	0.00	0.02	0.00	0.25	0.01	0.10
Propane Firing															
Propane Lift Trucks			6.02	0.4	0.4	0.6	14.0	0.5	1.9	0.00	0.00	0.00	0.04	0.00	0.01
			(10^3 gallons)			*(0.10S)*		**TOC value							
Uncontrolled Potential to Emit (tons per year):										0.06	0.24	0.02	3.03	0.17	1.94

Methodology

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 94 for heat input capacity < 0.3 MMBtu/hr; = 100 for heat input capacity =>0.3 MMBtu/hr

**Emission Factors for CO: Uncontrolled = 40 for heat input capacity < 0.3 MMBtu/hr; = 84 for heat input capacity =>0.3 MMBtu/hr

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

For Natural Gas Firing:

Potential Throughput for each building combustion unit (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors for all units except generators from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPL. D 7/98)

For Propane Firing:

Emission Factors are from AP42 (Supplement B 10/96), Table 1.5-1 (SCC #1-03-010-02)

1 gallon of LPG has a heating value of 94,000 Btu ;1 gallon of propane has a heating value of 91,500 Btu (use this to convert emission factors to an energy basis for propane)

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.0915 MMBtu

PM emission factor is filterable PM only. PM10 emission factor is assumed to be the same as PM based on a footnote in Table 1.5-1, therefore PM10 is filterable only as well.

Appendix A: Emission Calculations
VOC and Particulate
From Surface Coating Operations

Company Name: Dodge Columbus Indiana
Address City IN Zip: 3300 East Tenth Street, Columbus, Indiana 47201
MSOP No.: 005-15340-00092
Reviewer: Michael Hirtler / EVP
Date: 03/15/02

Potential Uncontrolled Emissions:

Coating Material	Type of Product Being Coated	Density (Lb/Gal)	Weight % Volatile (H20& Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Vol (solids)	Gal of Mat (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential ton/yr	lb VOC /gal solids	Transfer Efficiency
Coatings Applied																	
Paint Booth 1 (using Titan Blue/Green)	metal	11.20	31.00%	0.00%	31.00%	0.00%	54.00%	0.201	(gal/hr)	3.47	3.47	0.70	16.71	3.05	2.38	4.18	65%
Paint Booth 2 (using Tital Blue/Green)	metal	11.20	31.00%	0.00%	31.00%	0.00%	54.00%	0.056	(gal/hr)	3.47	3.47	0.20	4.69	0.86	0.67	4.18	65%
Paint Booth 3 (using Tital Blue/Green)	metal	11.20	31.00%	0.00%	31.00%	0.00%	54.00%	0.052	(gal/hr)	3.47	3.47	0.18	4.34	0.79	0.62	4.18	65%
Paint Booth 4 (using Tital Blue/Green)	metal	11.20	31.00%	0.00%	31.00%	0.00%	54.00%	0.104	(gal/hr)	3.47	3.47	0.36	8.68	1.58	1.23	4.18	65%
Solvent Usage for Clean Up																	
xylene cleanup usage - Paint Booth 1		7.19	100.00%	0.00%	100.00%	0.00%	0.00%	0.020	(gal/hr)			0.14	3.45	0.63	0.00	ERR	100%
xylene cleanup usage - Paint Booth 2		7.19	100.00%	0.00%	100.00%	0.00%	0.00%	0.020	(gal/hr)			0.14	3.45	0.63	0.00	ERR	100%
toluene cleanup usage - Paint Booth 3		6.00	100.00%	0.00%	100.00%	0.00%	0.00%	0.020	(gal/hr)			0.12	2.88	0.53	0.00	ERR	100%
toluene cleanup usage - Paint Booth 4		6.00	100.00%	0.00%	100.00%	0.00%	0.00%	0.020	(gal/hr)			0.12	2.88	0.53	0.00	ERR	100%
Total Uncontrolled Potential to Emit:												**1.96**	**47.09**	**8.59**	**4.89**		

	12-mos Input Usage Limit	Control Efficiency	Controlled VOC lbs per Hour	Controlled VOC lbs per Day	Controlled VOC tons per Year	Controlled PM tons/yr
	VOC	PM				
Total Controlled Potential to Emit:	100.00%	94.00%	**1.84**	**44.26**	**8.59**	**0.29**

Methodology:

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids) * Transfer Efficiency
Total = Sum of Worst Coatings per booth + Sum of all solvents used
Controlled VOC Emission Rate = Uncontrolled Emission Rate * (1 - VOC Input Limitation)
Controlled PM Emission Rate = Uncontrolled Emission Rate * (1 - Control Efficiency)

Appendix A: HAP Emission Calculations

Company Name: **Dodge Columbus Indiana**
Address City IN Zip: **3300 East Tenth Street, Columbus, Indiana 47201**
MSOP No.: **005-15340-00092**
Reviewer: **Michael Hirtler / EVP**
Date: **03/15/02**

Material (as applied)	Density (Lb/Gal)	Gal of Mat (gal/unit)	Maximum (unit/hour)	Weight % toluene	Weight % xylene	Weight % glycol ethers	Weight % (pollutant)	Weight % (pollutant)	Weight % (pollutant)	HAP EMISSION RATES (TONS PER YEAR)						
										toluene	xylene	glycol ethers	(pollutant)	(pollutant)	(pollutant)	Total HAPs
Coatings Applied																
Paint Booth 1 (using Titan Blue/Green)	11.20	0.201	(gal/hr)	20.00%	0.00%	5.00%	0.00%	0.00%	0.00%	1.97	0.00	0.49	0.00	0.00	0.00	2.46
Paint Booth 2 (using Tital Blue/Green)	11.20	0.056	(gal/hr)	20.00%	0.00%	5.00%	0.00%	0.00%	0.00%	0.55	0.00	0.14	0.00	0.00	0.00	0.69
Paint Booth 3 (using Tital Blue/Green)	11.20	0.052	(gal/hr)	20.00%	0.00%	5.00%	0.00%	0.00%	0.00%	0.51	0.00	0.13	0.00	0.00	0.00	0.64
Paint Booth 4 (using Tital Blue/Green)	11.20	0.104	(gal/hr)	20.00%	0.00%	5.00%	0.00%	0.00%	0.00%	1.02	0.00	0.26	0.00	0.00	0.00	1.28
Solvent Usage for Clean Up																
xylene cleanup usage - Paint Booth 1	7.19	0.020	(gal/hr)	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.63	0.00	0.00	0.00	0.00	0.63
xylene cleanup usage - Paint Booth 2	7.19	0.020	(gal/hr)	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.63	0.00	0.00	0.00	0.00	0.63
toluene cleanup usage - Paint Booth 3	6.00	0.020	(gal/hr)	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.53	0.00	0.00	0.00	0.00	0.00	0.53
toluene cleanup usage - Paint Booth 4	6.00	0.020	(gal/hr)	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.53	0.00	0.00	0.00	0.00	0.00	0.53
Uncontrolled Potential to Emit (tons/year):										**5.10**	**1.26**	**1.01**	**0.00**	**0.00**	**0.00**	**7.38**
Limited/Controlled Potential to Emit (tons/year):										**5.10**	**1.26**	**1.01**	**0.00**	**0.00**	**0.00**	**7.38**

METHODOLOGY

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs

Total = worst coating + sum of all solvents used

Appendix A: Welding

Company Name: **Dodge Columbus Indiana**
Address City IN Zip: **3300 East Tenth Street, Columbus, Indiana 47201**
MSOP No.: **005-15340-00092**
Reviewer: **Michael Hirtler / EVP**
Date: **03/15/02**

PROCESS	Total No. of Stations	Total Max. Electrode Consumption	EMISSION FACTORS * (lb pollutant / lb electrode)					EMISSIONS (lb/hr)					TOTAL HAPS
WELDING		(lbs/hr)	PM = PM10	Manganese	Nickel	Cobalt	Chromium	PM = PM10	Manganese	Nickel	Cobalt	Chromium	
Shielded Metal Arc Welding (E7018)	2	37.56	1.84E-02	1.03E-03	2.00E-06	1.00E-06	6.00E-06	6.91E-01	3.87E-02	7.51E-05	3.76E-05	2.25E-04	0.04
Uncontrolled Potential to Emit (tons/year)								**3.03**	**0.17**	**0.00**	**0.00**	**0.00**	**0.17**

METHODOLGY

Emission Factors from AP 42 (January 1995), Chapter 12.19, Tables 12.19-1 and 12.19-2.
Welding emissions, lb/hr: (max. lbs of electrode used/hr)(emission factor, lb. pollutant/lb. of electrode used)
Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/day x 1 ton/2,000 lbs.

APPENDIX A: PROCESS EMISSIONS SUMMARY

BABBITT PREPARATION

Process:	Kolene Caustic Bath, Sulfuric Acid Bath, Hydrochloric Acid Bath, Flux Bath, Tin/Solder Bath, Natural Gas Fired Heater
Estimation Method:	Mass Balance and Emission Factors
Maximum Process Throughput:	
Kolene Caustic Bath =	0.17 gallons Kastech Electrolyte per hour
Sulfuric Acid Bath =	1.03 pounds Sulfuric Acid per hour
Hydrochloric Acid Bath =	0.30 pounds Hydrochloric Acid per hour
Flux Bath =	0.16 gallons flux solution per hour
Tin/Solder Bath =	0.93 pounds tin/lead alloy per hour
Natural Gas Fired Heater =	2 million BTU/hour
Source of Emissions:	Material Safety Data Sheets and USEPA Fire Database 6.23
Pollutants Generated By Process:	PM, PM10, SO2, NOx, VOC, CO, sulfuric acid mist (H2SO4) and HAPs (HCl)
Pollution Control Equipment:	None

Kolene Caustic Bath

According to the MSDS provided by DCI, the Kolene Kastech Electrolytic solution and the Ammonium Chloride solution does not contain volatiles, sulfur oxides, nitrous oxides or hazardous air pollutants. The Kolene Kastech Electrolytic and Ammonium Chloride solutions are comprised entirely of aqueous solution and therefore will not generate particulate emissions.

Sulfuric Acid (H2SO4) Bath

Quantity of H2SO4 emitted = (Maximum Process Throughput)(Percentage of acid) (8,760 hours/year)(1 ton/2,000 pounds)(Number of Baths)

Quantity of H2SO4 emitted = (1.031bs/hr)(0.98)(8, 760 hr/yr)(1 ton/2,000 pounds)(1) = 4.4212 tons/year (this is a non-HAP, Clean Air Act regulated pollutant)

Hydrochloric Acid (HCl)

Quantity of HAP emitted = (Maximum Process Throughout)(Percentage of HAP)(8,760 hours/year)(1 ton/2,000 pounds)(Number of Baths)

Quantity of HAP emitted = (0.30 lbs/hr)(1.00)(8,760 hr/yr)(1 ton/2,000 pounds)(1) = 1.3140 tons/year

Flux Bath (as zinc chloride, ammonium chloride and water)

Quantity of NOx emitted = (Maximum Process Throughput)(Percentage of NOx)(Density) (8,760 hours/year)(1 ton/2,000 pounds)(Number of Baths)

Quantity of NOx emitted = (0.16 gallons/hour)(0.044)(7.62 pounds/gallons)(8,760 hr/yr) (1 ton/2,000 pounds)(1) = 0.2350 tons/year

Natural Gas Heater (1-03-006-03)

(see attached spreadsheet for natural gas fired combustion units, page 2 of 16)

BABBITT APPLICATION

Process:	Three melting pots, one natural gas holding oven, mold application, three machining centers, two boring machines, and three sanders
Estimation Method:	Emission Factors & Mass Balance
Maximum Process Throughput:	
Babbitt Melting =	11.08 pounds Babbitt material per hour
Natural Gas Holding Oven =	0.51 mmBTU per hour
Machining Centers =	375 pounds per hour each
Boring Machines =	375 pounds per hour each
Sanders =	375 pounds per hour each
Source of Emissions:	US EPA Fire Database 6.23 & Mass Balance
Pollutants Generated By Process	PM, PM10, SOx, NOx, VOC, CO and HAPs (Pb)
Pollution Control Equipment:	None

Babbitt Melting:

In 1995, August Mack collected lead air samples from above the Babbitt hood at a similar operation at another source. The Babbitt melting hood was selected to determine the "worst-case" emissions because of the high lead content in the Babbitt material and the melting pot is maintained at a high temperature of approximately 550 degrees Fahrenheit. As a result of the air sampling, no lead was detected in the air sample filters. The study also concluded that Antimony would not be detected since it is present in a much lower percentage of the material and melts at a much higher temperature than lead. Therefore, as the temperature increases, airborne lead would be detectable before airborne antimony.

(Note: USEPA's AP-42 emission factor document, Section 12.17 (Miscellaneous Lead Products) shows "negligible lead emissions from metal melting for bearing manufacturing" (i.e., this process). Further, Section 12.17.3.1 states that "emissions from bearing manufacturing are negligible, even without controls." This determination in AP-42 would tend to support the results of the air sampling; therefore, further testing or detailed review of the 1995 study report has not been required or conducted as part of this approval process. However, for purposes of these computations, HAP metal emissions are assumed as lead)

Natural Gas Oven (1-03-006-03)

(see attached spreadsheet for natural gas fired combustion units, page 2 of 16)

Machining Centers

The machining centers are completely enclosed and utilize a coolant to capture particulate emissions therefore this process does not generate any criteria pollutants or HAPS emissions.

Boring Machines (3-04-003-60)

Quantity of PM emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds)
(1 ton/2,000 pounds)(8,760 hours/year)(Number of Boring Machines)

Quantity of PM emitted = (375 lbs/hr)(0.01 lb/ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds)
(8,760 hours/year)(2) = 0.0164 tons/year

Quantity of PM10 emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds)
(1 ton/2,000 pounds)(8,760 hours/year)(Number of Boring Machines)

Quantity of PM10 emitted = (375 lbs/hr)(0.0045 lb/ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds)(8,760 hours/year)(2) = 0.0074 tons/year

Quantity of HAP emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds)(1 ton/2,000 pounds)(8,760 hours/year)(Number of Boring Machines)

Quantity of HAP emitted = (375 lbs/hr)(0.011b/ ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds)(8,760 hours/year)(2) = 0.0164 tons/year

Sanders (3-04-003-60)

Quantity of PM emitted = (Maximum Capacity){Emission Factor)(1 ton/2,000 pounds)(1 ton/2,000 pounds)(8,760 hours/yr)(Number of Sanders)

Quantity of PM emitted = (375 lbs/hr)(0.01lb/ ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds)(8,760 hrs/yr)(3) = 0.0246 tons/year

Quantity of PM10 emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds)(1 ton/2,000 pounds)(8,760 hours/year)(Number of Sanders)

Quantity of PM10 emitted = (375 lbs/hr)(0.0045 lb/ ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds)(8,760 hrs/yr)(3) = 0.0111 tons/year

Quantity of HAP emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds)(1 ton/2,000 pounds)(8,760 hours/year)(Number of Sanders)

Quantity of HAP emitted = (375 lbs/hr)(0.011b/ ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds)(8,760 hrs/yr)(3) = 0.0246 tons/year

* * * * *

BABBITT RE-WORK

Process:	One oxyacetylene torch and three sanders
Estimation Method:	Emission Factors & Mass Balance
Maximum Process Throughput:	
Sanders =	375 pounds per hour each
Source of Emissions:	US EPA Fire Database 6.23 & Mass Balance
Pollutants Generated By Process:	PM, PM10, HAPS
Pollution Control Equipment:	None

Sanders (3-04-003-60)

Quantity of PM emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds)(1 ton/2,000 pounds)(8,760 hours/year)(Number of Sanders)

Quantity of PM emitted = (375 lbs/hr)(0.01 lb/ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds)(8,760 hrs/yr)(3) = 0.0246 tons/year

Quantity of PM10 emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds)
(1 ton/2,000 pounds)(8,760 hours/year)(Number of Sanders)

Quantity of PM10 emitted = (375 lbs/hr)(0.0045 lb/ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds)
(8,760 hrs/yr)(3) = 0.0111 tons/year

Quantity of HAP emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds)
(1 ton/2,000 pounds)(8,760 hours/year)(Number of Sanders)

Quantity of HAP emitted = (375 lbs/hr)(0.01 lb/ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds)
(8,760 hrs/yr)(3) = 0.0246 tons/year

* * * * *

CAST IRON PARTS MACHINING OPERATIONS

Machining Using Lubricants and Cutting Oils

Process:	Machining
Estimation Method:	Mass Balance
Maximum Process Throughput:	6,700 gallons/year
VOC content	0.9606 pounds of VOC per gallon*
Source of Emissions:	Mass Balance
Pollutant Generated By Process:	VOC
Pollution Control Equipment:	N/A

VOC Emissions from Coolant:

Quantity of VOC emitted = (Maximum Process Throughput)(Emission Factor)(1 ton/2,000 pounds)

Quantity of VOC emitted = (6,700 gallons/yr)(0.9606 lb VOC/gal)(1 ton/2,000 pounds)
= 3.218 tons/year

*Note: Emission factor of 0.9606 lbs VOC/gallon was taken from previous air emission inventory

Additional Machining Equipment Not Utilizing a Coolant to Capture Particulate Emissions

Process:	4 Lathes, 4 Machining Centers, 22 Drills, 1 Grinders, 1 Band Saw, 10 Chuckers, and 4 Milling Machines
Estimation Method:	Mass Balance & Emission Factors
Maximum Process Throughput:	
Lathes =	200 pounds per hour each
Machining Centers =	0.375 pounds per hour each
Drills =	375 pounds per hour each
Grinders =	375 pounds per hour each
Ban Saw =	375 pounds per hour each
Chuckers =	375 pounds per hour each
Milling Machines =	375 pounds per hour each
Tap Heavy Compound =	6 gallons per year

Source of Emissions:	Mass Balance & US EP A FIRE Database 6.23
Pollutants Generated By Process:	PM, PM10, HAPS
Pollution Control Equipment:	None

The machines that utilize a coolant to capture particulate emissions do not generate any criteria pollutants or HAPS emissions. These machines are not included in the following emission calculations.

Lathes (3-04-003-60)

Quantity of PM emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds)
(1 ton/2,000 pounds)(8,760 hours/year)(Number of Lathes)

Quantity of PM emitted = (200 lbs/hr)(0.01lb/ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds)
(8,760 hours/year)(4) = 0.0175 tons/year

Quantity of PM10 emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds)
(1 ton/2,000 pounds)(8,760 hours/year)(Number of Lathes)

Quantity of PM10 emitted = (200 lbs/hr)(0.0045lb/ ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds)
(8, 760 hours/year)(4) = 0.0079 tons/year

Quantity of HAP emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds)
(1 ton/2,000 pounds)(8,760 hours/year)(Number of Lathes)(Percent HAP)

Quantity of HAP emitted = (200 lbs/hr)(0.01 lb/ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds)
(8,760 hours/year)(4)(1.00) = 0.0175 tons/year

Machining Centers

Quantity of PM emitted = (Maximum Capacity)(Percent Material Loss)(1 ton/2,000 pounds)
(8,760 hours/year)(Number of Machining Centers)

Quantity of PM emitted = (0.375lbs/hr)(0.0005)(1 ton/2,000 pounds)(8,760 hours/year)(4)
= 0.0033 tons/year

Quantity of PM10 emitted = (Maximum Capacity)(Percent Material Loss)(1 ton/2,000 pounds)
(8,760 hours/year)(Number of Machining Centers)

Quantity of PM10 emitted = (0.375lbs/hr)(0.0005)(1 ton/2,000 pounds)(8,760 hours/year)(4)
= 0.0033 tons/year

Quantity of HAP emitted = (Maximum Capacity)(Percent Material Loss)(1 ton/2,000 pounds)
(8, 760 hours/year)(Number of Machining Centers)(Percent HAP)

Quantity of HAP emitted = (0.375 lbs/hr)(0.0005)(1 ton/2,000 pounds)(8,760 hours/year)(4)(1.00)
= 0.0033 tons/year

Drills (3-04-003-60)

Quantity of PM emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds)
(1 ton/2,000 pounds)(8,760 hours/year)(Number of Drills)

Quantity of PM emitted = (375 lbs/hr)(0.01 lb/ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds)
(8,760 hours/year)(22) = 0.1807 tons/year

Quantity of PM10 emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds)
(1 ton/2,000 pounds)(8,760 hours/year)(Number of Drills)

Quantity of PM10 emitted = (375 lbs/hr)(0.0045 lb/ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds)
(8, 760 hours/year)(22) = 0.0813 tons/year

Quantity of HAP emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds)
(1 ton/2,000 pounds)(8,760 hours/year)(Number of Drills)(Percent HAP)

Quantity of HAP emitted = (375 lbs/hr)(0.01 lb/ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds)
(8,760 hours/year)(22)(1.00) = 0.1807 tons/year

Grinders (3-04-003-60)

Quantity of PM emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds)
(1 ton/2,000 pounds)(8,760 hours/year)(Number of Grinders)

Quantity of PM emitted = (375 lbs/hr)(0.01 lb/ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds)
(8,760 hours/year)(1) = 0.0082 tons/year

Quantity of PM10 emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds)
(1 ton/2,000 pounds)(8,760 hours/year)(Number of Grinders)

Quantity of PM10 emitted = (375 lbs/hr)(0.0045 lb/ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds)
(8,760 hours/year)(1) = 0.0037 tons/year

Quantity of HAP emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds)
(1 ton/2,000 pounds)(8,760 hours/year)(Number of Grinders)(Percent HAP)

Quantity of HAP emitted = (375 lbs/hr)(0.01 lb/ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds)
(8,760 hours/year)(1)(1.00) = 0.0082 tons/year

Ban Saw (3-04-003-60)

Quantity of PM emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds)
(1 ton/2,000 pounds)(8,760 hours/year)(Number of Ban Saws)

Quantity of PM emitted = (375 lbs/hr)(0.01 lb/ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds)
(8,760 hours/year)(1) = 0.0082 tons/year

Quantity of PM10 emitted = (Maximum Capacity)(Emission Factor)(I ton/2,000 pounds)
(1 ton/2,000 pounds)(8,760 hours/year)(Number of Ban Saws)

Quantity of PM10 emitted = (375 lbs/hr)(0.0045 lb/ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds)
(8,760 hours/year)(1) = 0.0037 tons/year

Quantity of HAP emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds)
(1 ton/2,000 pounds)(8,760 hours/year)(Number of Ban Saws)(Percent HAP)

Quantity of HAP emitted = (375 lbs/hr)(0.01 lb/ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds) (8,760 hours/year)(1)(1.00) = 0.0082 tons/year

Chuckers (3-04-003-60)

Quantity of PM emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds) (1 ton/2,000 pounds)(8,760 hours/year)(Number of Chuckers)

Quantity of PM emitted = (375 lbs/hr)(0.01 lb/ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds) (8,760 hours/year)(10) = 0.0821 tons/year

Quantity of PM10 emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds) (1 ton/2,000 pounds)(8,760 hours/year)(Number of Chuckers)

Quantity of PM10 emitted = (375 lbs/hr)(0.0045 lb/ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds) (8,760 hours/year)(10) = 0.0370 tons/year

Quantity of HAP emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds) (1 ton/2,000 pounds)(8,760 hours/year)(Number of Chuckers)(Percent HAP)

Quantity of HAP emitted = (375 lbs/hr)(0.01 lb/ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds) (8,760 hours/year)(10)(1.00) = 0.0821 tons/year

Milling Machines (3-04-003-60)

Quantity of PM emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds) (1 ton/2,000 pounds)(8,760 hours/year)(Number of Milling Machines)

Quantity of PM emitted = (375 lbs/hr)(0.01 lb/ton)(1 ton/2,000 pounds)(8,760 hours/year)(4) = 0.0328 tons/year

Quantity of PM10 emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds) (1 ton/2,000 pounds)(8,760 hours/year)(Number of Milling Machines)

Quantity of PM10 emitted = (375 lbs/hr)(0.0045 lb/ton)(1 ton/2,000 pounds)(8,760 hours/year)(4) = 0.0148 tons/year

Quantity of HAP emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds) (1 ton/2,000 pounds)(8,760 hours/year)(Number of Milling Machines) (Percent HAP)

Quantity of HAP emitted = (375 lbs/hr)(0.01 lb/ ton)(1 ton/2,000 pounds)(8,760 hours/year) (4)(1.00) = 0.0328 tons/year

According to the MSDS, the cast iron material processed through the above mentioned machining equipment contains the following HAPS up to the weight percentages noted:

- Aluminum = 0.1 percent;
- Antimony = 0.95 percent;
- Chromium = 0.9 percent;
- Copper = 94.0 percent;
- Lead = 25.0 percent;
- Manganese = 1.1 percent;

- Nickel = 1.5 percent; and,
- Zinc = 12.0 percent

Tap Heavy Compound

Quantity of VOC emitted = (Maximum Capacity)(percent VOC)(Specific Gravity)(Density of Water) (1 ton/2,000 pounds)

Quantity of VOC emitted = (6 gallons/year)(0.0023)(1.25)(8.34 lbs/gal)(1 ton/2,000 pounds) = 0.0001 tons/year

* * * * *

PARTS CLEANING PROCESS

Process:	One Parts Washer, Rust Preventative Bath, One Electric Dryer, and One 225-gallon Dip Tank Located in the Warranty Repair Department
Estimation Method:	Mass Balance
Maximum Process Throughput:	
Parts Washer =	0.92 gallons per hour of Fuchs Parts Washer
Rust Preventive =	0.62 gallons per hour of Fuchs Rust Preventive
Dip Tank =	0.12 gallons per hour of Safety-Kleen Solvent
Source of Emissions:	Mass Balance
Pollutants Generated By Process:	VOC
Pollution Control Equipment:	None

Parts Washer

Quantity of VOC emitted = (Maximum Capacity)(Emission Factor)(Density of Water) (1 ton/2,000 pounds)(8,760 hours/year)

Quantity of VOC emitted = (0.92 gal/hour)(0.18 lbs/gal)(1 ton/2,000 pounds)(8,760 hr/yr) = 0.7253 tons/year

Rust Preventive

According to the MSDS provided by DCI, the rust preventive solutions (i.e., Chemetall Oakite Inpro-Tect 600 and Oakite 398T) in use by the source contain no volatiles, and the quantity of VOC emitted is zero.

Dip Tank

Quantity of VOC emitted = (Maximum Capacity)(Percent Volatile)(Specific Gravity)(Density of Water)(1 ton/2,000 pounds)(8,760 hours/year)

Quantity of VOC emitted = (0.12 gal/hr)(1.00)(0.82)(8.34 lb/gal)(1 ton/2,000 pounds)(8,760 hr/yr) = 3.5945 tons/year

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COOLANT RECYCLING OPERATIONS

Process:	Evaporator 1 (Natural Gas Fired); Evaporators 2 & 3 and Two Natural Gas Fired Units
Estimation Method:	Emission Factors
Maximum Process Throughput:	
Evaporator 1 =	112.59 pounds per hour 0.195 mmBTU per hour
Evaporators 2 and 3 =	13.68 pounds per hour each 0.3 mmBTU per hour each
Source of Emissions:	US EPA FIRE Database 6.23
Pollutants Generated By Process:	PM, PM10, SOx, NOx, VOCs, and CO
Pollution Control Equipment:	None

Evaporator 1 (4-90-002-02)

Quantity of VOC emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds) (1 ton/2,000 pounds)(8,760 hours/year)

Quantity of VOC emitted = (112.59 pounds/hr)(3.3 lb/ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds)(8,760 hr/yr) = 0.814 tons/year

Evaporators 2 & 3 (4-90-002-02)

Quantity of VOC emitted = (Maximum Capacity)(Emission Factor)(1 ton/2,000 pounds) (1 ton/2,000 pounds)(8,760 hours/year)

Quantity of VOC emitted = (27.36 pounds/hr)(3.3 lb/ton)(1 ton/2,000 pounds)(1 ton/2,000 pounds) (8,760 hr/yr) = 0.1977 tons/year

Natural Gas Fired Units (1-03-006-03)

(see attached spreadsheet for natural gas fired combustion units, page 2 of 16)

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ADHESIVE APPLICATION

Process:	One 7.25 gallon Seal Dip Tank
Estimation Method:	Mass Balance
Maximum Process Throughput:	
Dip Tank =	0.11 pounds per hour
Source of Emissions:	Mass Balance
Pollutants Generated By Process:	VOC and Hydroquinone (HAP)
Pollution Control Equipment:	None

Seal Dip Tank

Quantity of VOC emitted = (Maximum Capacity)(Percent Volatile)(1 ton/2,000 pounds) (8,760 hours/year)

Quantity of VOC emitted = (0.11 pounds/hour)(0.3867)(1 ton/2,000 pounds)(8,760 hours/year)
= 0.1863 tons/year

* * * * *

CURING OPERATIONS

Process:	Heat Treat with Endothermic Heat Treat Ovens T500 & T900, Ipsen Generator (Natural Gas Usage) & Electric Grieve Curing Oven
Estimation Method:	Fire 6.23 Emission Factors & Mass Balance
Maximum Process Throughput:	
T500, T900 & Ipsen:	8.76 mmft3 per year (total)
Electric Grieve Oven:	650 pounds metal parts per batch (30 minute cycle)
Source of Emissions:	AP-42; Mass Balance
Pollutants Generated By Process:	PM, PM10, SOx, NOx, VOC, CO
Pollution Control Equipment:	none

Heat Treat Ovens T500 & T900, and Ipsen Generator (1-03-006-03)

(see attached spreadsheet for natural gas fired combustion units, page 2 of 16)

Electric Grieve Curing Oven

This is an electric oven with no combustion emissions. According to the MSDS provided by DCI, the applied epoxy resin in use by the source contains no volatiles.

PACKAGING OPERATIONS

Process:	Three Instapak Spray Stations
Estimation Method:	Mass Balance
Maximum Process Throughput:	
Instapak Component "A" =	0.025 gallons per hour (total)
Instapak Component "B" =	0.025 gallons per hour (total)
Instapak Port Cleaner =	4 gallons per year (total)
Source of Emissions:	Material Safety Data Sheets
Pollutants Generated By Process:	VOC and HAP (MDI)
Pollution Control Equipment:	None

Instapak Component “A"

Quantity of VOC emitted = (Maximum Capacity)(percent VOC)(Density)(1 ton/2,000 pounds)
(8,760 hours/year)

Quantity of VOC emitted = (0.025 gal/hr)(0.45)(10.3 lb/gal)(1 ton/2,000 pounds)(8,760 hours/year)
= 0.5075 tons/year

Quantity of HAP emitted = (Maximum Capacity)(Percent HAP)(Density)(1 ton/2,000 pounds)
(8,760 hours/year)

Quantity of HAP emitted = (0.025 gal/hr)(0.45)(10.3 lb/gal)(1 ton/2,000 pounds)(8,760 hours/year) = 0.5075 tons/year

(Note: even though the MDI contained in the applied foam will polymerize, this computation assumes that all MDI is emitted.)

Instapak Component "B"

According to the MSDS supplied by DCI, Instapak Component "B" does not contain any HAPS or criteria pollutants.

Instapak Port Cleaner

Quantity of VOC emitted = (Maximum Capacity)(percent VOC)(Density)(1 ton/2,000 pounds) (8,760 hours/year)

Quantity of VOC emitted = (0.00045 gal/hr)(0.96)(9.4 lb/gal)(1 ton/2,000 pounds)(8,760 hours/year) = 0.0178 tons/year